

Why does global population growth matter? In view of the current size of Earth's population and the NIR, will there soon be too many of us? Will continued population growth lead to global starvation, war, and a lower quality of life?

Geographers are particularly well suited to address these questions because answers require understanding both human behavior and the physical environment. Further, geographers observe that diverse local cultural and environmental conditions may produce different answers in different places.

Malthus on Overpopulation

English economist Thomas Malthus (1766–1834) was one of the first to argue that the world's rate of population increase was far outstripping the development of food supplies. Malthus's views remain influential today.

Population Growth Versus Food Supply

In *An Essay on the Principle of Population*, published in 1798, Malthus claimed that the population was growing much more rapidly than Earth's food supply because population increased geometrically, whereas food supply increased arithmetically. According to Malthus, these growth rates would produce the following relationships between people and food in the future:

- Today: 1 person, 1 unit of food
- 25 years from now: 2 persons, 2 units of food

- 50 years from now: 4 persons, 3 units of food
- 75 years from now: 8 persons, 4 units of food
- 100 years from now: 16 persons, 5 units of food

Malthus made these conclusions several decades after England had become the first country to enter stage 2 of the demographic transition, in association with the Industrial Revolution. He concluded that population growth would press against available resources in every country, unless "moral restraint" produced lower CBRs or unless disease, famine, war, or other disasters produced higher CDRs.

NEO-MALTHUSIANS. Contemporary geographers and other analysts are taking another look at Malthus's theory because of Earth's unprecedented rate of natural increase during the late twentieth century. Neo-Malthusians argue that two characteristics of recent population growth make Malthus's thesis more frightening than when it was first written more than 200 years ago.

First, in Malthus's time only a few relatively wealthy countries had entered stage 2 of the demographic transition, characterized by rapid population increase. Malthus failed to anticipate that relatively poor countries would have the most rapid population growth because of transfer of medical technology (but not wealth) from MDCs. As a result, the gap between population growth and resources is wider in some countries than even Malthus anticipated.

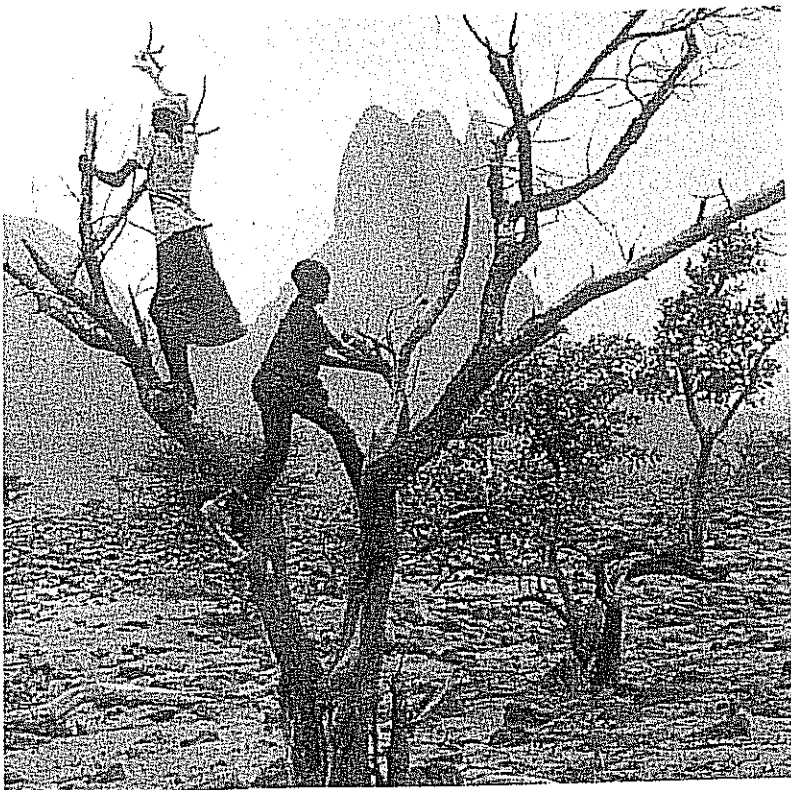
Many LDCs have expanded their food production significantly in recent years, but they have more poor people than ever before. For example, income in East African countries rose during the past three decades by approximately 2 percent per year above inflation, but the population grew by approximately 3 percent per year. Because population growth outpaced economic development, all the economic growth was absorbed simply in accommodating the additional population. Despite this economic growth, the average East African is worse off today than 10, 20, or 30 years ago.

The second argument made by neo-Malthusians is that world population growth is outstripping a wide variety of resources, not just food production. Neo-Malthusians Robert Kaplan and Thomas Fraser Homer-Dixon paint a frightening picture of a world in which billions of people are engaged in a desperate search for food and energy. According to neo-Malthusians, wars and civil violence will increase in the coming years because of scarcities of food as well as such resources as clean air, suitable farmland, and fuel.

Malthus's Critics

Malthus's theory has been severely criticized from a variety of perspectives. Criticism has been leveled at both the population growth and resource depletion sides of Malthus's equation.

Many geographers consider Malthusian beliefs unrealistically pessimistic because they are based on a belief that the world's supply of resources is fixed rather than expanding. According to the principles of possibilism discussed in Chapter 1, our well-being is influenced by conditions in the physical environment, but humans have some ability to choose courses of action that can expand the supply of food and other resources. A steady flow



Overpopulation in Mali. A region can be sparsely inhabited yet overpopulated if it has rapid population growth and limited resources, as is the case in Mali.

of new technology can offset scarcity of minerals and arable land by using existing resources more efficiently and substituting new resources for scarce ones.

Contemporary analysts such as Esther Boserup and Simon Kuznets criticize Malthus's theory that population growth produces problems. To the contrary, a larger population could stimulate economic growth and, therefore, production of more food. Population growth could generate more customers and more ideas for improving technology.

Julian Simon argued that population growth stimulated economic growth. More people means more brains to invent good ideas for improving life. Asked Simon, "Does anyone seriously doubt that Europe is more prosperous with a population of hundreds of millions than it would be with a population of hundreds of thousands?"

Marxists maintain that no cause-and-effect relationship exists between population growth and economic development. Poverty, hunger, and other social welfare problems associated with lack of economic development are a result of unjust social and economic institutions, not population growth.

Marxist theorist Friedrich Engels dismissed Malthus's arithmetic as an artifact of capitalism. Engels argued that the world possessed sufficient resources to eliminate global hunger and poverty, if only these resources were shared equally. Under capitalism, workers do not have enough food because they do not control the production and distribution of food and are not paid sufficient wages to purchase it.

The world is much better off economically with 6+ billion people than it was with 1 billion, argue Malthus's critics, because too few people can retard economic development as surely as can too many people. A large population of consumers can generate a greater demand for goods, which results in more jobs.

Some political leaders, especially in Africa, argue that high population growth is good for a country because more people will result in greater power. Population growth is desired in order to increase the supply of young men who could serve in the armed forces. On the other side of the coin, more developed countries are viewed as pushing for lower population growth as a means of preventing further expansion in the percentage of the world's population living in poorer countries.

Declining Birth Rates

Although the Malthus theory seems unduly pessimistic on a global scale, geographers recognize the diversity of conditions among regions of the world. Although the world as a whole may not be in danger of "running out" of food, some regions with rapid population growth do face shortages of food.

Malthus Theory and Reality

On a global scale, conditions during the past half-century have not supported Malthus's theory. Even though the human population has grown at its most rapid rate ever, world food production has consistently grown at a faster rate than the NIR since 1950, according to geographer Vaclav Smil (Figure 2-20). Smil has shown that Malthus was fairly close to the mark on food production but much too pessimistic on population growth.

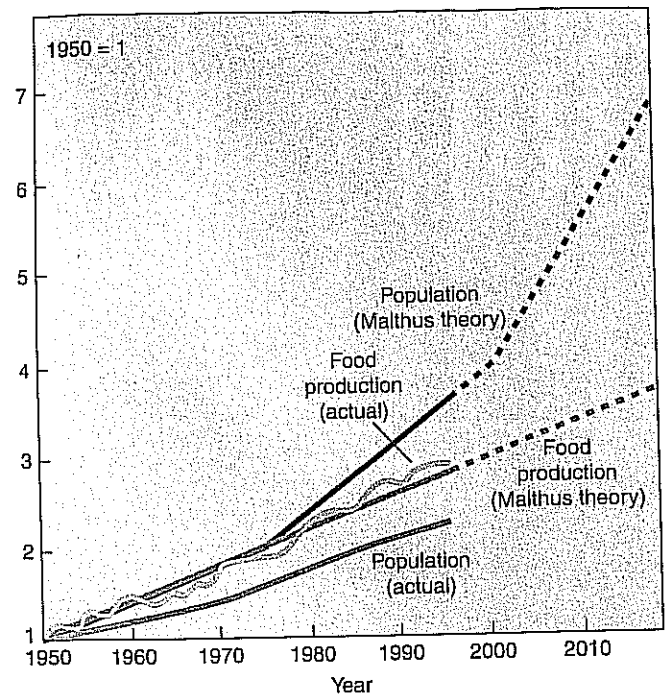


FIGURE 2-20 Malthus's theory compared to actual world food production and population, 1950–2000. Malthus expected population to grow more rapidly than food production. In reality, during the second half of the twentieth century—when world population grew at its most rapid rate ever—food production actually expanded even more rapidly.

Food production increased during the last half of the twentieth century somewhat more rapidly than Malthus predicted. Better growing techniques, higher-yielding seeds, and cultivation of more land all contributed to the expansion in food supply (see Chapter 10). Many people in the world cannot afford to buy food or do not have access to sources of food, but these are problems of distribution of wealth rather than insufficient global production of food, as Malthus theorized.

Malthus's model expected world population to quadruple between 1950 and 2000, from 2.5 billion to 10 billion people but world population actually grew during this period to only 6 billion. Malthus did not foresee critical cultural, economic, and technological changes that would induce societies sooner or later to move on to stages 3 and 4 of the demographic transition.

Population has been increasing at a much slower rate during the past quarter-century than it was during the previous half-century. The NIR declined during the 1990s from 1.8 to 1.3 for the world as a whole, from 2.1 to 1.6 in LDCs, and from 0.5 to 0.1 in MDCs. In contrast, during the 1980s the world NIR rose from 1.7 in 1980 to 1.8 in 1990 because of an increase from 2.0 to 2.1 in LDCs.

However, neo-Malthusians point out that despite the lower NIR during the 1990s, the world added approximately the same number of people as during the 1980s. Because of a larger population base, a smaller NIR can still produce a larger number of people.

Reasons for Declining Birth Rates

The NIR can decline for only two reasons—lower birth rates or higher death rates. Few people wish to see the NIR decline because of an increase in death rates. The only demograph

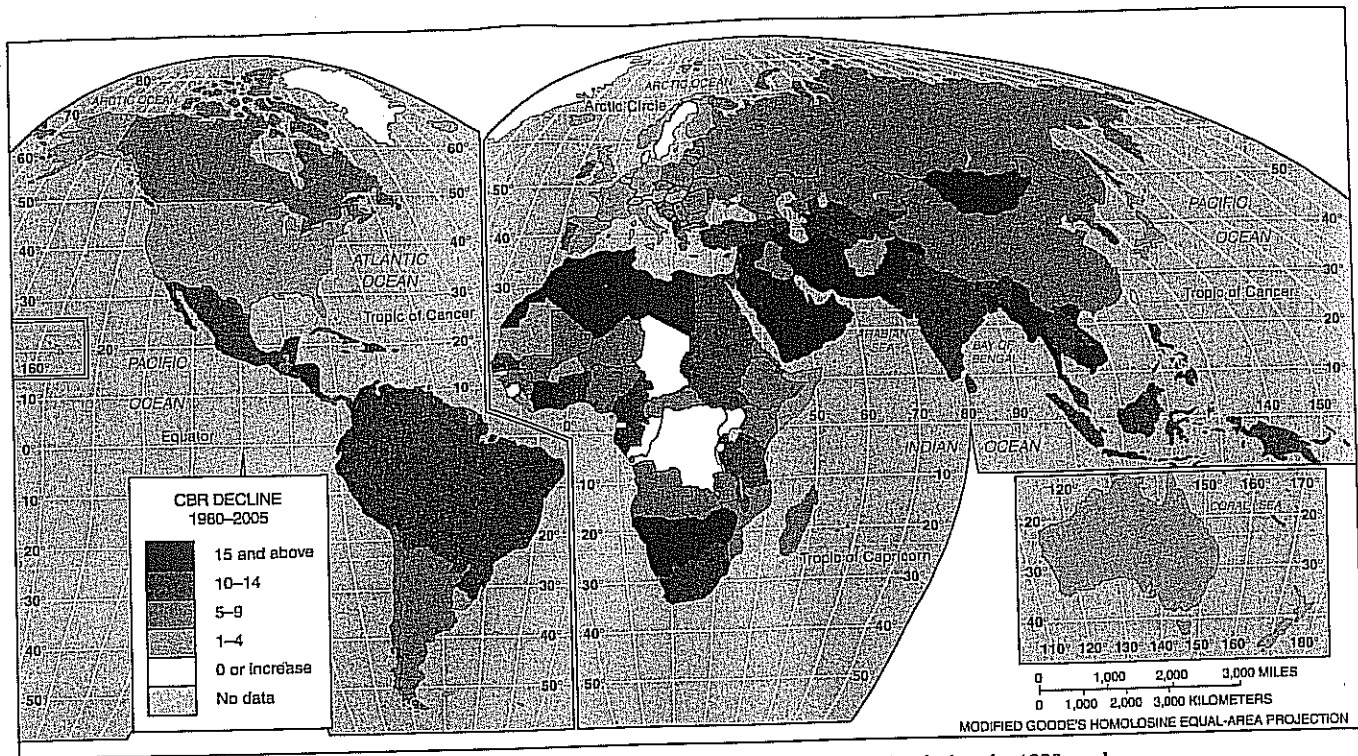


FIGURE 2-21 Crude birth rate change, 1980–2005. The crude birth rate declined in most countries during the 1980s and 1990s. Declines were relatively rapid in the Middle East, Latin America, and South Asia. Still, the number of births in the world increased during the quarter-century from about 120 million to 140 million.

alternative is to reduce birth rates. In most countries, the decline in the NIR has occurred because of a lower birth rate, but in some countries of sub-Saharan Africa, the CDR is increasing.

The CBR has declined rapidly since 1990 from 27 to 21 in the world as a whole, from 15 to 10 in MDCs, and from 31 to 24 in LDCs. A substantial decline in the birth rate has been recorded since 1990 by nearly every country in Asia, Latin America, and the Middle East, as well as selected countries in sub-Saharan Africa (Figure 2-21).

Two strategies have been successful in reducing birth rates. One alternative emphasizes reliance on economic development, the other on distribution of contraceptives. Because of varied economic and cultural conditions, the most effective method varies among countries.

ECONOMIC DEVELOPMENT. One approach to lowering birth rates emphasizes the importance of improving local economic conditions. A wealthier community has more money to spend on education and health-care programs that would promote lower birth rates.

According to this approach, if more women are able to attend school and to remain in school longer, they are more likely to learn employment skills and gain more economic control over their lives. With better education, women would better understand their reproductive rights, make more informed reproductive choices, and select more effective methods of contraception.

With improved health-care programs, IMRs would decline through such programs as improved prenatal care, counseling about sexually transmitted diseases, and child immunization. With the survival of more infants ensured, women would be

more likely to choose to make more effective use of contraceptives to limit the number of children.

DISTRIBUTION OF CONTRACEPTIVES. The other approach to lowering birth rates emphasizes the importance of rapidly diffusing modern contraceptive methods. Economic development may promote lower birth rates in the long run, but the world cannot wait around for that alternative to take effect. Putting resources into family-planning programs can reduce birth rates much more rapidly.

In LDCs, demand for contraceptive devices is greater than the available supply. Therefore, the most effective way to increase their use is to distribute more of them, cheaply and quickly.



Promoting family planning in Peru.